UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,857	09/25/2003	Gopal Dommety	CISCP345	1271

22434   7590   06/02/2008
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EXAMINER
CHEA, PHILIP J

ART UNIT	PAPER NUMBER
2153	

MAIL DATE	DELIVERY MODE
06/02/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2008*.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20 and 22-24* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-20 and 22-24* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

This Office Action is in response to an Amendment filed March 12, 2008. Claims 1-20,22-24 are currently pending, of which claims 22-24 are new. Any rejection not set forth below has been overcome by the current Amendment.

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear when the host object was authenticated. In claim 1, it is not specifically mentioned that the Mobile Node was ever authenticated using the layer 2 information, so it is not clear how an orphaned host object can be generated. As an additional note, did the Applicant mean to generate an orphaned host object or an unorphaned host object after the authentication.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-2,4,9,14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Droms et al. ("RADIUS Attributes Sub-option for the DHCP Relay Agent Information Option"), herein referred to as Droms further in view of Applicants Admitted Prior Art, herein referred to as AAPA.

As per claims 1,14-16, Droms discloses a method for performing layer 2 authentication of a Mobile Node supporting Mobile IP, as claimed, comprising:

obtaining layer 2 information including at least one of a MAC address or a username associated with the Mobile Node (see top of page 2, "access point can authenticate the identity of the user of a device before providing layer 2 network access", *where the identity of the user is considered the layer 2 information and further describing how authentication credentials are exchanged with a network access device,* and page 4, second paragraph below "DHCP Relay Agent Behavior", *describing the layer 2 information as User-Name, Calling-Stations-ID and Class attributes*);

generating an orphaned host object including the layer 2 information (see top of page 2, *where the orphaned object is considered the mobile node awaiting the authentication of the layer 2 information*);

unorphaning the orphaned host object when an IP address associated with the layer 2 information is received such that the unorphaned host object includes the IP address and the layer 2 information (see page 1, "Abstract", *discussing how an IP address is associated with layer 2 information after authentication, and the unorphaned host is considered the authenticated mobile node with IP address*), wherein the IP address associated with the layer 2 information is received without performing layer 3 authentication of the Mobile Node, thereby enabling layer 3 policies to be enforced without performing layer 3 authentication of the Mobile Node (see page 4, "DHCP Server Behavior", *discussing how the DHCP server receives RADIUS attributes, (i.e. the layer 2 information) and uses that to configure the client, implying that layer 3 authentication is not performed since the layer 2 information was already authenticated with user name and credentials*); and

providing access to services based upon the IP address of the unorphaned host object (e.g. *mobile node is authenticated by layer 2 and receives an IP address so that services can be offered to the mobile node from the network it is connected to*).

Although the system disclosed by Droms shows substantial features of the claimed invention (discussed above), it fails to disclose that the method is performed in an SSG based network.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Droms, as evidenced by AAPA.

In an analogous art, AAPA discloses how various systems can be used for authentication of a Mobile Node. For instance a service selection gateway (SSG) (see Specification page 4, lines 13-16).

Given the teaching of AAPA, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Droms by employing an SSG based network, such as disclosed by AAPA, in order to take advantage of SESM solutions such as authentication of the user, policy enforcement, etc.

As per claim 2, Droms further discloses obtaining a username associated with the Mobile Node; wherein the orphaned host object includes the username associated with the mobile node (see page 4, second paragraph below "DHCP Relay Agent Behavior").

As per claim 4, Droms further discloses that unorphaning the orphaned host object comprises: receiving a packet including the IP address and the layer 2 information; and updating the orphaned host object to include the IP address, thereby generating an unorphaned host object (see discussion above regarding how the RADIUS server provides the layer 2 authentication and allows a DHCP server to select an IP address for the network device, thereby unorphaning the host object).

As per claim 9, Droms further discloses an IP address of a network device from which the packet was received, the method further comprising:

maintaining a mapping between the IP address of the network device and the IP address of the Mobile Node such that a mapping of one or more Mobile Nodes supported by the network device is maintained (see top of page 2, *describing how a network element using 802.1x is mapped to a DHCP server (i.e. IP address)*).

As per claim 17, Droms further discloses enforcing layer 3 policies based upon the layer 2 authentication of the Mobile Node (see Abstract, where IP address authentication by layer 2 authentication implies layer 3 policy).

As per claim 18, Droms further discloses enforcing layer 3 policies without performing layer 3 authentication (see Abstract, discussing how layer 2 authentication is used in conjunction with an IP address to give access to the network).

As per claim 19, Droms further discloses enforcing layer 3 policies by accessing the unorphaned host object (see Abstract, wherein once the layer 2 attributes from the RADIUS server are received by the DHCP server and an IP address is assigned based on the layer 2 authentication, the host object is

unorphaned and layer 3 policies are enforced because there is an IP address that has already been authenticated using layer 2).

As per claim 20, Droms further discloses enforcing layer 3 policies based upon the IP address of the unorphaned host object (see discussion for claim 19).

As per claims 22,24, AAPA further discloses that it is old and well known to authenticate using an EAP-SIM protocol (see AAPA Specification page 5, lines 6-9). *Furthermore, since Droms teaches a mechanism for providing authenticated layer 2 network access while providing layer 3 policies (i.e. IP address), it would be obvious to use a protocol such as EAP-SIM).*

As per claim 23, Droms further discloses authenticating the Mobile Node using the layer 2 information;

wherein generating an orphaned host object including the layer 2 information is performed after the Mobile Node has been authenticated using the layer 2 information (see page 4, "5. DHCP Server Behavior", *showing that after layer 2 information is authenticated, the configuration parameters for the client are selected implying a generation of the host object).*

3.   Claims 3,5-8,10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Droms in view of AAPA as applied to claim 1 above, and further in view of Livingston ("RADIUS Accounting").

As per claim 3, Droms discloses receiving the layer 2 information in an access request packet (see page 2, Figure 1, and page top of page 2, *describing the layer 2 information that is passed on for authentication);*

wherein generating the orphaned host object is performed when an access accept packet is received indicating the Mobile Node associated with the layer 2 information (see page 2, Figure 1 [4], and page 4, "5. DHCP Server Behavior").

Although the system disclosed by Droms shows substantial features of the claimed invention (discussed above), it fails to disclose being authenticated by a AAA server.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Droms, as evidenced by Livingston.

        In an analogous art, Livingston discloses the accountability options for the RADIUS protocol (see second paragraph below "1. Introduction") and using an AAA server for authentication (see page 2, "1. Introduction" *describing authentication, authorization and accounting services that the RADIUS Accounting service provides*).

        Given the teaching of Livingston, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Droms by employing an AAA server, such as disclosed by Livingston, in order to managing a single database of users which allows for authentication as well as configuration information detailing the type of service to deliver the user.

        As per claim 5, Droms in view of Livingston discloses receiving an ACCT start packet (see Livingston page 4, paragraph 1, *describing a start packet*) including the IP address and the layer 2 information (see Droms Page 4, second paragraph below "4. DHCP Relay Agent Behavior" and "5. DHCP Server Behavior").

        As per claims 6,7,8,10, Livingston further renders obvious receiving an ACCT stop packet including the IP address (see page 3, "2. Operation", *describing an ACCT stop packet describing type of service that was delivered and input and output packets implying an IP address within the packets*).

        In considering deleting the unorphaned host object when the ACCT stop packet is received, it would have been an obvious modification to eliminate an element and its function according to In re Karlson, 311 F.2d 581, 583, 136 USPQ 184, 186 (CCPA 1963); In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975). It would be advantageous to delete the unorphaned host object in order to prevent someone else from maliciously using session information and deleting the unorphaned host would not take away from the functionality of the RADIUS server since the unorphaned host is no longer needed.

        As per claim 11, Livingston further renders obvious receiving a packet including the IP address of the network device that indicates that the network device is not functioning (see page 11, "5.1 Acct-Status-Type", *showing that an accounting off packet can be sent to mark the end of accounting (i.e. reboot = not functioning because it is off)*); and

deleting the unorphaned host object or orphaning a host object for each of the Mobile Nodes supported by the network device (*see discussion above regarding the obviousness for removing an element and its function because it is no long needed since the device is not functioning*).

As per claim 12, Livingston further renders obvious that the packet including the IP address of the network device that indicates that the network device is not functioning is an ACCT-OFF packet (see page 11, "5.1 Acct-Status-Type", *showing that an accounting off packet can be sent to mark the end of accounting*).

As per claim 13, Livingston further renders obvious that the IP address of the network device that indicates that the network device is not functioning is an ACCT-ON packet (see page 11, "5.1 Acct-Status-Type", *showing that an accounting on packet can be sent upon booting*). Considering that the RADIUS protocol is used and the device is not functioning, it would have been obvious to a person having ordinary skill in the art that when the device is not functioning a reboot would try and correct the problem and then the device would send out an ACCT-ON packet in order to inform the RADIUS protocol it is ready to accept incoming connections.

Response to Arguments

4.   Applicant's arguments filed March 12, 2008 have been fully considered but they are not persuasive.

A)   Applicant contends that Droms does not disclose generating an orphaned host object or that an orphaned host object maybe unorphaned.

In considering A), the Examiner respectfully disagrees. Applicants specification suggests that an orphaned object is generated with layer 2 information (see page 7, lines 9-11). Droms shows that layer 2 information is obtained and waits for authentication from a server. The Examiner believes the communication of the layer 2 information is considered the orphaned object. That is, a request with user name and other credentials (i.e. message object) awaits to be authenticated so it is currently orphaned (see top of page 2, "access point can authenticate the

identity of the user of a device before providing layer 2 network access", *where the identity of the user is considered the layer 2 information and further describing how authentication credentials are exchanged with a network access device,* and page 4, second paragraph below "DHCP Relay Agent Behavior", *describing the layer 2 information as User-Name, Calling-Stations-ID and Class attributes).* In considering the orphaned host becoming unorphaned, Droms discloses authenticating the layer 2 mobile node and giving it an IP address (see page 1, "Abstract", *discussing how an IP address is associated with layer 2 information after authentication, and the unorphaned host is considered the authenticated mobile node with IP address).* Applicants specification suggests that an orphaned object is unorphaned when an IP address is associated with the layer 2 information (see page 7, lines 11-14). Therefore, Droms meets the claimed limitation because layer 2 information is associated with an IP address given from a DHCP server.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHILIP J. CHEA whose telephone number is (571)272-3951. The examiner can normally be reached on M-F 6:30-4:00 (1st Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Glenton B. Burgess/   Philip J Chea
Supervisory Patent Examiner, Art Unit 2153   Examiner
                                                                   Art Unit 2153

PJC 5/23/08